

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF NEW YORK**

SOUTH FARMINGDALE WATER  
DISTRICT,

Plaintiff,

**-against-**

THE DOW CHEMICAL COMPANY,  
FERRO CORPORATION, VULCAN  
MATERIALS COMPANY, NORTHROP  
GRUMMAN CORPORATION, and  
NORTHROP GRUMMAN SYSTEMS  
CORPORATION,

Defendants.

**Complaint for a Civil Case**

Case No. 19-cv-1404

Jury Trial Demanded

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## **I. Introduction**

1. Plaintiff South Farmingdale Water District (“the District” or “Plaintiff”) is a public drinking water provider established in 1931 and serving approximately 45,000 residents and businesses in Nassau County, New York. The District serves its customers with 11 production wells that draw groundwater from the Long Island aquifer system. The District brings this action to protect the public and restore its damaged drinking water supply wells, which are contaminated by the toxic chemical 1,4-dioxane.

2. 1,4-dioxane is a highly toxic substance and likely human carcinogen that is an ingredient, component, contaminant, and/or impurity in certain industrial and commercial products. Historically, its primary use was as a stabilizer for the chlorinated solvent trichloroethane (“TCA”), most commonly used as a degreaser for machined metal parts, among other uses. In addition to being toxic to humans, 1,4-dioxane is highly mobile and persists as a contaminant in soil and groundwater for many decades.

3. 1,4-dioxane and/or products containing 1,4-dioxane were used and discharged in the vicinity of the District’s drinking water production wells. 1,4-dioxane has migrated from multiple sources through the subsurface and into the groundwater, and now contaminates several of the District’s wells.

4. The District brings this action against two groups of defendants: (1) manufacturers, distributors, retailers, and promoters of 1,4-dioxane and/or industrial products containing 1,4-dioxane that caused the contamination of all the District’s impacted wells (collectively, “Supplier Defendants”); and (2) entities related to the Northrop Grumman Corporation that disposed of and released substances containing 1,4-dioxane in the vicinity of the District’s service area, thereby

causing 1,4-dioxane to migrate via groundwater and contaminate certain public drinking water supply wells within the District's system (collectively, "Northrop Grumman").

5. Supplier Defendants knowingly and willfully manufactured, promoted, and/or sold products containing 1,4-dioxane to industrial facilities and consumers in Nassau County, when they knew or reasonably should have known that this harmful compound would inevitably reach groundwater, significantly pollute drinking water wells, render drinking water unusable and unsafe, and threaten the public health and welfare, as it has done and will continue to do with respect to the District's wells.

6. Northrop Grumman knowingly and willfully handled, stored, treated, transported, and/or disposed of substances containing 1,4-dioxane at their facilities in a manner that caused 1,4-dioxane to enter the groundwater aquifer and invade the District's wells, rendering drinking water unusable and unsafe and threatening the public health and welfare.

7. The District files this lawsuit to recover the substantial costs necessary to protect the public and restore its damaged drinking water supply wells. The District seeks compensatory damages and all other remedies, including but not limited to all necessary funds to reimburse the District for the costs of designing, constructing, installing, operating, and maintaining the treatment facilities and equipment required to remove the 1,4-dioxane from its drinking water wells, and all associated costs, and to ensure that the parties responsible for the drinking water contamination bear these expenses, rather than the District and its ratepayers.

## **II. Parties**

### **A. Plaintiff**

8. **Plaintiff South Farmingdale Water District** is a public drinking water provider established in 1931 that serves approximately 45,000 residents and businesses in the communities

of South Farmingdale, North Massapequa, and parts of Bethpage, Seaford, and Massapequa Park, Nassau County, Long Island, New York.

9. The District obtains its water exclusively from underground wells that it owns and operates. It operates and manages a groundwater supply system that includes 11 wells on 6 pumping sites located throughout the geographic territory it serves.

10. The District's wells are contaminated and/or threatened by 1,4-dioxane contamination.

11. The District has a duty to exercise due care and diligence in the maintenance and supervision of its public water system to ensure the protection of the public health pursuant to 10 NYCRR § 5-1.51.

12. In carrying out its powers, duties, and responsibilities as a local governmental entity, the District acts in all respects for the benefit of the people of the South Farmingdale Water District and the State of New York, for the protection of their health, welfare, and prosperity.

## **B. Defendants**

13. **Supplier Defendants.** The following defendants designed, manufactured, formulated, marketed, promoted, distributed, sold, and/or otherwise supplied (directly or indirectly) 1,4-dioxane and/or products containing 1,4-dioxane such that each defendant knew or should have known that 1,4-dioxane would be delivered into the area and subsequently released into the environment, leading to the contamination of the District's water supply wells.

- a. **Defendant Dow Chemical Company** is a Delaware corporation with its principal office in Midland, Michigan, which at all times relevant to this action was doing business in New York.

- b. **Defendant Ferro Corporation** is an Ohio corporation with its principal office in Mayfield Heights, Ohio, which at all times relevant to this action was doing business in New York.
- c. **Defendant Vulcan Materials Company** is a New Jersey corporation with its principal place of business in Birmingham, Alabama, which at all times relevant to this action was doing business in New York.

14. **Northrop Grumman Defendants.** The following defendants owned and/or operated facilities on approximately 600 acres in east-central Nassau County, formerly known as the Grumman Aerospace-Bethpage Facility Site, and including the Northrop Grumman – Bethpage Facility, the Naval Weapons Industrial Reserve Plant – Bethpage (“NWIRP”), and the Grumman Steel Los Site (collectively “the Site”). Northrop Grumman or its predecessors owned and/or operated the Site throughout its approximately six-decade operation, where they used, stored, transported, and/or disposed of toxic chemicals and manufacturing byproducts. At the Site, Northrop Grumman purchased, used, stored, handled, disposed of, and/or released hazardous substances, including the industrial solvent TCA. Northrop Grumman permitted those hazardous substances, including TCA containing 1,4-dioxane, to leave the Site and contaminate Plaintiff’s public drinking water supply wells.

- a. **Defendant Northrop Grumman Corporation** is a Delaware corporation with its principal place of business at 2980 Fairview Park Drive, in Falls Church, Virginia.
- b. **Defendant Northrop Grumman Systems Corporation** is a Delaware corporation with its principal place of business at 2980 Fairview Park Drive, in Falls Church, Virginia. Upon information and belief, Northrop Grumman Systems Corporation is

a subsidiary of Northrop Grumman Corporation and a successor in interest to Grumman Aerospace Corporation.

15. The Supplier Defendants and Northrop Grumman are referred to collectively as “Defendants.”

16. When reference is made in this Complaint to any act or omission of any of the Defendants, it shall be deemed that the officers, directors, agents, employees, or representatives of the Defendants committed or authorized such act or omission, or failed to adequately supervise or properly control or direct their employees while engaged in the management, direction, operation, or control of the affairs of Defendants, and did so while acting within the scope of their duties, employment, or agency.

17. All references to a Defendant or Defendants in this Complaint include any predecessors, successors, parents, subsidiaries, affiliates, and divisions of the named Defendants.

### **III. Jurisdiction and Venue**

18. The United States District Court for the Eastern District of New York has jurisdiction over this action pursuant to 28 U.S.C. § 1332 because the matter in controversy is between citizens of different states and exceeds the sum of \$75,000.

19. This Court has jurisdiction over Defendants because, based on information and belief, each Defendant has sufficient minimum contacts in New York because it either (1) intentionally avails itself of the New York market through the distribution or sale of its products containing 1,4-dioxane in the State of New York; or (2) has conducted business in New York that caused the discharges of 1,4-dioxane complained-of herein; so as to render the exercise of jurisdiction over it by this Court consistent with traditional notions of fair play and substantial

justice. Each Defendant is a corporation or other business entity authorized to do business in New York and registered with the New York Secretary of State.

20. Venue is proper in the Eastern District of New York pursuant to 28 U.S.C. § 1391(b)(2) because a substantial part of the events, omissions, and harms giving rise to this case occurred in the Eastern District of New York.

#### **IV. Factual Allegations**

##### **A. The Contaminant: 1,4-Dioxane**

21. 1,4-dioxane is a synthetic industrial chemical that does not occur in nature. Highly toxic and extremely persistent in the environment, 1,4-dioxane poses a risk to human health.

22. Historically, the vast majority of 1,4-dioxane use was as a stabilizer for the chlorinated solvent methyl chloroform, also known as 1,1,1-trichloroethane (“TCA”). TCA is a man-made volatile organic chemical (“VOC”) that was most widely used as a degreasing agent and also used as a solvent in various household and industrial products, including paints, glues, and septic and drain cleaners. Widespread use of TCA stabilized by 1,4-dioxane started in the early 1960s and continued until 1996, when the Montreal Protocol banned TCA for its role in depleting the ozone layer. Even after its ban, TCA was still widely used under an exemption for “existing stocks.”

23. 1,4-dioxane, which is completely miscible (dissolvable) in water, was present in various grades of TCA at concentrations of approximately 2 to 8 percent by volume. When used for degreasing, the most common industrial application, 1,4-dioxane becomes significantly more concentrated in the degreasing wastes due to its higher boiling point compared to TCA.

24. 1,4-dioxane has unique characteristics that cause extensive and persistent environmental contamination. Specifically, it is (1) mobile—that is, because it does not adsorb (stick) to soil particles, it is readily transported through the soil and into groundwater where it can



migrate long distances; and (2) persistent—that is, it does not readily biologically or chemically degrade in the environment or in conventional treatment systems for drinking water. In sum, once TCA or other wastes containing 1,4-dioxane are applied, discharged, disposed of, or otherwise released onto land, 1,4-dioxane migrates through the subsurface and into groundwater, resists natural degradation, and is difficult and costly to remove from water.

25. 1,4-dioxane contamination presents a significant threat to public health and welfare. The U.S. Environmental Protection Agency (EPA) classifies 1,4-dioxane as “likely to be carcinogenic to humans” by all routes of exposure, including drinking water. 1,4-dioxane also causes liver and kidney damage.

26. 1,4-dioxane is fungible: 1,4-dioxane made and/or used by one Defendant is chemically identical to 1,4-dioxane made and/or used by any other Defendant. Using currently accepted scientific methods, it is impossible to identify the manufacturer of the 1,4-dioxane based on the chemical’s physical characteristics.

27. Once released into the environment, 1,4-dioxane lacks characteristics or a chemical signature that would enable identification of the specific company that manufactured the product, based on any physical characteristics. Even when, as here, it is possible to identify a source of a plume of 1,4-dioxane, it is impossible, based on any physicochemical characteristics, to identify what portions of commingled 1,4-dioxane was manufactured or supplied by any particular Defendant.

#### **B. Regulatory Standards Applicable to 1,4-Dioxane**

28. No federal or state agency has approved 1,4-dioxane as an additive to drinking water at any level. No federal or state agency has approved releasing or discharging 1,4-dioxane to groundwater in any amount. The District has never consented to the presence of 1,4-dioxane in its wells in any amount.

29. Currently, there is no enforceable federal or New York State drinking water standard for 1,4-dioxane.

30. 1,4-dioxane is regulated as an “unspecified organic contaminant” by the New York State Department of Health under a generic maximum contaminant level (“MCL”) of 50 parts per billion (“ppb”).<sup>1</sup> None of the District’s wells has ever exceeded this generic standard.

31. State legislation passed in 2017 requires all New York-based water systems to test for 1,4-dioxane contamination.

32. In September 2017, Governor Cuomo appointed 12 members to a new Drinking Water Quality Council tasked with ensuring all New Yorkers have access to safe and clean drinking water. The Council’s initial responsibility includes recommending an enforceable MCL for 1,4-dioxane as a priority emerging contaminant that remains unregulated by the federal government. On December 18, 2018, the Council met and recommended an MCL of 1 ppb for 1,4-dioxane, rendering enforcement imminent.

33. An MCL governs the relationship between public water suppliers, including the District, and the State of New York. It is not a license to pollute up to the MCL.

### **C. Supplier Defendants’ Knowledge of 1,4-Dioxane’s Hazards**

34. In the United States, 1,4-dioxane was primarily manufactured by Dow Chemical Company and Ferro Corporation. A third company, Union Carbide, also manufactured 1,4-dioxane but merged with Dow in 2001.

35. The technology for 1,4-dioxane stabilization of TCA was owned, and licensed, by Defendant Dow Chemical Company, the market leader in production of both TCA and

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<sup>1</sup> New York’s MCL is denominated in micrograms per liter (µg/L); this measure is equivalent to parts per billion. *See, e.g.*, Zane Satterfield, “What Does ppm or ppb Mean?,” Nat’l Env’tl. Servs. Ctr., W. Va. Univ., at 1 (2004), *available at* <http://nesc.wvu.edu/ndwc/articles/ot/fa04/q&a.pdf>.

1,4-dioxane. Defendant Vulcan Materials Company licensed this process from Dow to produce 1,4-dioxane-stabilized TCA.

36. Supplier Defendants knew or should have known of the grave harm and threat to public health and the environment presented by proliferating use of 1,4-dioxane products. Specifically, at all times relevant to this action, Supplier Defendants knew or reasonably should have known, among other things, that: (a) 1,4-dioxane is toxic to humans; and (b) when products containing 1,4-dioxane are applied, discharged, disposed of, or otherwise released onto land, 1,4-dioxane readily migrates through the subsurface, mixes easily with groundwater, and once present in water, resists natural degradation, renders drinking water unsafe and/or non-potable, and requires significant expenses to remove from public drinking water wells. Supplier Defendants' own research establishes their knowledge of these characteristics of 1,4-dioxane.

37. At all times relevant to this action, Supplier Defendants have been among the nation's most sophisticated and technically advanced companies in many areas, including chemistry, organic chemistry, analytical chemistry, methods of subsurface investigation, and other areas. As such, they were uncommonly well-positioned to evaluate the potential for the application of their products to result in groundwater contamination.

38. The general mechanisms by which groundwater becomes contaminated with persistent organic compounds, including 1,4-dioxane, have been described in technical literature with which the Supplier Defendants were or should have been familiar since at least the 1940s.

39. At all times relevant to this action, Supplier Defendant producers of 1,4-dioxane and TCA stabilized with 1,4-dioxane knew or reasonably should have known that the degreasing equipment used by metal product manufacturers and other industrial facilities routinely leaked or otherwise released TCA—and, therefore necessarily 1,4-dioxane—into the environment.

40. At all times relevant to this action, Supplier Defendant producers of 1,4-dioxane and TCA stabilized with 1,4-dioxane knew that the primary use of their product, i.e. vapor degreasing, significantly concentrates 1,4-dioxane in the waste stream. Because 1,4-dioxane boils at a higher temperature than TCA, a relatively high proportion of 1,4-dioxane remains as a liquid during vapor degreaser operations. Vapor degreasing causes TCA to be lost to the atmosphere, requiring operators to periodically add TCA to the tank. Consequently, while TCA was stabilized with between 2.5 and 4.5% 1,4-dioxane by weight, Dow Chemical's publications and patents show that after use of 1,4-dioxane-stabilized TCA in vapor degreasing operations, the ending concentration of 1,4-dioxane was often as high as 15 to 25%. Waste TCA removed from vapor degreasers therefore typically included high concentrations of 1,4-dioxane with great potential to contaminate large volumes of groundwater. Moreover, it was foreseeable to Supplier Defendants—indeed, it was well known—that such wastes were often disposed of onto land, where they migrated into groundwater.

41. Supplier Defendants knew or should have known that routine solvent handling, use, and disposal practices led to frequent and substantial releases from facilities using 1,4-dioxane-related compounds. Users of chlorinated solvents, including TCA produced by Supplier Defendants, routinely disposed of waste solvents by pouring them onto the ground or into trenches for evaporation or burning. In addition, solvent use and recovery systems by design produced wastewater with very high concentrations of 1,4-dioxane and also routinely malfunctioned and/or otherwise discharged solvent containing 1,4-dioxane, resulting in releases to surface and groundwater. Supplier Defendants were at all times aware of these practices and foreseeable equipment malfunctions and spills, and the likelihood of releases to the ground and groundwater of solvents containing 1,4-dioxane. Indeed, users of chlorinated solvents, including TCA, were

routinely advised by Supplier Defendants themselves to dispose of waste solvents by pouring them onto the ground or into trenches for evaporation or burning. These practices resulted in significant soil and groundwater contamination from metals fabrication and other industrial solvent release sites during the height of TCA use in the 1960s through the 1990s.

42. Despite knowing or having reason to know that long-term groundwater contamination and pollution of water wells were inevitable consequences of the foreseeable uses of their products without proper precautionary measures, including but not limited to adequate warnings, Supplier Defendants nonetheless promoted, marketed, and or/sold such products in Nassau County and elsewhere without providing any such warnings.

43. At all times relevant to this action, Supplier Defendants developed, tested, patented, and generally knew of the existence of feasible alternative stabilizers to obviate the use of 1,4-dioxane to stabilize TCA.

44. At all times relevant to this action, Supplier Defendants manufactured, tested, or were otherwise aware of alternative solvents that would have eliminated the use of TCA stabilized by 1,4-dioxane. For example, trichloroethylene (“TCE”), which did not contain 1,4-dioxane, was used for vapor degreasing at significant volumes throughout all time periods relevant to this action.

45. Despite knowing or having reason to know of 1,4-dioxane’s toxic properties and propensity to contaminate groundwater, and despite the existence of feasible alternative designs that did not contain 1,4-dioxane, Supplier Defendants nonetheless manufactured, promoted, marketed, and/or sold TCA containing 1,4-dioxane that was used in the vicinity of the District’s wells.

46. The Supplier Defendants, and each of them, substantially contributed to the 1,4-dioxane contamination in the District’s wells.

#### **D. Northrop Grumman's Operations and History of Contamination**

47. Northrop Grumman began operations at the Grumman Aerospace – Bethpage Facility in Bethpage, New York, in the 1930s. The facility operated continuously until approximately 1996, when all manufacturing at the Site ceased.

48. From the 1930s through the end of World War II, Northrop Grumman designed and manufactured airplanes and landing craft for the U.S. Navy at the Site. After World War II, the main activities at the Site included the engineering, manufacturing, primary assembly, and research, development, and testing of a variety of aerospace crafts.

49. During its decades of operations at the Site, Northrop Grumman handled, stored, treated, transported, and/or disposed of industrial chemicals, including TCA. Northrop Grumman procured these industrial chemicals in large quantities, stored them in various manners at the Site, and transported them among various facilities at the Site.

50. Throughout their operations, Northrop Grumman disposed of various hazardous wastes from industrial processes directly into the environment. These wastes included TCA containing 1,4-dioxane.

51. Historically, the main source of wastes from the Site was the metal finishing process lines. Degreasing, commonly using TCA, was a critical cleaning step prior to plating and painting.

52. From approximately 1949 through 1962, Northrop Grumman utilized the “Former Grumman Settling Ponds” area within the Site to dispose of various wastes generated by industrial operations at the Site, including degreaser or distillation sludge, which typically contained concentrated levels of 1,4-dioxane from TCA use.

53. In October 1962, Northrop Grumman's predecessor Grumman Aircraft Engineering Corporation donated approximately 18 acres of its land near the intersection of

Steward Avenue and Cherry Avenue, in Bethpage, New York, to the Town of Oyster Bay. This land is now known as the Bethpage Community Park (“the Park”). Within the Park, a ball field area was built over the location of the Former Grumman Settling Ponds.

54. Northrop Grumman still owns the Grumman Access Road, a closed private road in the vicinity of the Park associated with the former Site.

55. Northrop Grumman constructed an Industrial Wastewater Treatment Plant (“IWTP”) at the Site in the 1940s to treat chromic acid and industrial process waste, however the treatment plant did not remove 1,4-dioxane. The IWTP discharged effluent to on-Site recharge basins prior to 1981, from where 1,4-dioxane migrated to the groundwater.

56. Wastewater treatment sludge generated at the IWTP was transported to the Park property and placed in one of the two sludge drying beds. The area where the sludge drying beds were located was enclosed by a chain-link fence, which was secured by a locked gate. This fenced area is visible in available aerial photographs dated between the 1950s and 1962, when the property was transferred to the Town of Oyster Bay.

57. Spent rags generated during the wipe-down of a paint booth water curtain located in Plant 2, and which would have been expected to be contaminated with TCA, were transported to the fenced-in area of the Park property where they were emptied into a pit located on the property. These actions caused or contributed to the current groundwater contamination plumes that contain 1,4-dioxane and contaminate the District’s wells.

58. Throughout the Site’s operational history, Northrop Grumman constructed at least a dozen “recharge basins” directly into the ground throughout the Site, which were used at least in part to dispose of industrial wastewater. The recharge basins were designed to allow wastewater to infiltrate to the groundwater the District relies upon for its public drinking water supply.

59. When the recharge rate of these basins was diminished due to buildup of sludge and sediment, Northrop Grumman bulldozed the basin bottoms to remove these materials. The contaminated material removed from these recharge basins was then used to fill in other low-lying areas on the Site, from where they could migrate readily through the subsurface to the groundwater.

60. Northrop Grumman discovered—at the latest—that some of the on-Site wells were contaminated in the early 1970s, when employees noticed an unusual taste and odor coming from the water faucets on the Site. At this time, Northrop Grumman operated a self-contained water supply system that was not connected to the public water supply system.

61. An investigation of the water wells on the Site revealed that they were heavily contaminated with industrial solvents, and after 1976, were no longer used for human consumption. The on-Site wells remained in use, however, for industrial and cooling purposes.

62. In 1983, the Site was listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State, also known as the State Superfund list.

63. In 1989, Northrop Grumman signed a Remedial Investigation/Feasibility Study (“RI/FS”) Order on Consent for Operable Unit 1 (“OU-1”) and Operable Unit 2 (“OU-2”). OU-1 encompasses the former manufacturing plant area. OU-2 consists of a large groundwater contamination plume that is approximately 4.5 miles long and 3.5 miles wide, and is continuously expanding and migrating south-southeast, toward the District’s service area. The source area of the OU-2 plume originates from the Site, with VOCs present at different concentrations and different depths.

64. On March 9, 1992, Northrop Grumman signed an Order on Consent with the State of New York to perform a remedial investigation and feasibility study (“RI/FS”) at the Site.



65. In 1995, New York State executed Records of Decision (“RODs”) for the Northrop Grumman and NWIRP Sites concerning on-site soil contamination in OU-1.

66. In March 2001, the New York Department of Environmental Conservation (“DEC”) issued a ROD for OU-2, which provided for wellhead treatment of several contaminants—but not 1,4-dioxane—at impacted public water supply wells, boundary monitoring of the plume, and the contingency for additional wellhead treatment should other wells be affected.

67. In July 2005, Northrop Grumman signed an RI/FS Order on Consent for the Former Grumman Settling Ponds, Adjacent Areas of the Bethpage Community Park, the Grumman Access Road, and associated on- and off-site groundwater, collectively known as Operable Unit 3 (“OU-3”). Northrop Grumman historically used these areas to dispose of hazardous waste generated by their operations, including 1,4-dioxane wastes.

68. In March 2013, DEC issued a ROD for OU-3, which provided for wellhead treatment of several contaminants—but not 1,4-dioxane—at various groundwater extraction wells not used for supplying drinking water to the public.

69. All three operable units are currently listed as Class 2 Inactive Hazardous Waste Sites, meaning the disposal of hazardous waste has been confirmed and the presence of that waste or its components or breakdown products “constitutes a significant threat to public health or the environment,” 6 NYCRR § 375-2.7.

70. In 2007, an area of elevated concentrations, or a “hotspot” of VOCs was discovered in the OU-3 plume upgradient from, and threatening to impact, the District’s wells.

71. Pursuant to investigations conducted by Northrop Grumman under DEC supervision, the plume of contaminated groundwater emanating from OU-3 has intermingled with

the OU-2 plume at depths of less than 400 feet. The OU-3 plume spreads deeper than the OU-2 plume, however, extending to a depth of at least 550 feet below ground surface.

72. 1,4-dioxane has reached groundwater from industrial uses at the Site primarily because degreasing operations—both vapor degreasing and cold cleaning—were characterized by inefficient solvent recapture and disposal systems. Leaks, spills, routine wastewater discharges, and careless storage and disposal practices led to frequent and substantial releases from Northrop Grumman’s operations at the Site.

73. Northrop Grumman routinely disposed of waste solvents by pouring them onto the ground or into trenches for evaporation or burning; in addition, solvent use and recovery systems routinely malfunctioned and/or otherwise spilled TCA containing 1,4-dioxane, resulting in releases to surface and groundwater. These practices, and frequent equipment malfunctions and spills, all increased the likelihood of releases to the ground and groundwater of toxic solvents. These practices resulted in significant soil and groundwater contamination from metals fabrication and other industrial solvent uses during the decades of manufacturing operations at the Site.

74. For many years, Northrop Grumman has been discharging 1,4-dioxane-contaminated water to recharge basins at a rate of more than 3,500 gallons per minute upgradient of the District’s service area. This water is the effluent from Northrop Grumman’s groundwater VOC treatment facilities, which do not remove 1,4-dioxane, and the discharge causes farther and faster spreading of 1,4-dioxane contamination to the District’s water supply wells.

**E. Harm Resulting from 1,4-Dioxane Contamination in South Farmingdale Water District’s Wells**

75. The District meets its customers’ demand for water exclusively from its supply wells that draw from the Long Island Aquifer System, designated by the EPA as a “sole source” aquifer under the Safe Drinking Water Act, 42 U.S.C. § 300h-3(3), in 1975. A sole source aquifer

is an aquifer that is “the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health.” The EPA observed that “contamination of the aquifer system underlying Nassau and Suffolk Counties, New York, would pose a significant hazard to those people dependent on the aquifer system for drinking purposes.”

76. 1,4-dioxane has been detected in varying amounts at varying times in the District’s wells. In addition, 1,4-dioxane’s high mobility and persistence in soil and groundwater means it likely will continue to spread to affect even more of the District’s wells in the future.

77. Supplier Defendants’ 1,4-dioxane is a major source of 1,4-dioxane in groundwater that is contaminating the District’s wells and is present in all the District’s impacted wells.

78. Northrop Grumman’s use and disposal at the Site of products containing Supplier Defendants’ 1,4-dioxane substantially contributes to the 1,4-dioxane contamination at several of the District’s wells, including Wells 1-3, 1-5, 3-1, and 6-2. The prevailing movement of groundwater from under the Site is to the south-southeast, into and through the areas of the aquifer from which the District’s production wells draw their drinking water.

79. In response to the presence of 1,4-dioxane in its wells, the District has taken and must undertake certain responsive measures. These include, but are not limited to, the need to address 1,4-dioxane in its wells, including by adding wellhead treatment and incurring associated costs to operate and maintain the wellhead treatment into the future. The District anticipates taking these and additional steps to address the continuing and future 1,4-dioxane contamination in its wells attributable to Defendants’ tortious conduct.

## **V. Causes of Action**

### **FIRST CAUSE OF ACTION Strict Products Liability for Defective Design (Against Supplier Defendants)**

80. The District realleges each of the preceding paragraphs and incorporates each such paragraph as if fully stated herein.

81. As commercial designers, manufacturers, distributors, suppliers, sellers, and/or marketers of products containing 1,4-dioxane, Supplier Defendants had a strict duty not to place into the stream of commerce a product that is unreasonably dangerous.

82. Supplier Defendants knew that third parties would purchase products containing 1,4-dioxane and use them without inspection for defects.

83. Products containing 1,4-dioxane purchased or otherwise acquired (directly or indirectly) from Supplier Defendants by third parties were applied, discharged, disposed of, or otherwise released onto lands and/or water in the vicinity of the District's drinking water production wells. Such discharges occurred at various locations, at various times, and in various amounts.

84. The products containing 1,4-dioxane purchased by third parties were used in a reasonably foreseeable manner and without substantial change in the condition of such products.

85. Supplier Defendants knew or reasonably should have known that the use of products containing 1,4-dioxane in their intended manner would result in the spillage, discharge, disposal, or release of 1,4-dioxane onto land or into water.

86. The products containing 1,4-dioxane used in the vicinity of the District's drinking water production wells were defective in design and unreasonably dangerous because, among other things:

- a. 1,4-dioxane causes extensive and persistent groundwater contamination when it, or products containing it, are used in their foreseeable and intended manner.
- b. 1,4-dioxane contamination in drinking water poses significant threats to public health and welfare.
- c. Supplier Defendants failed to conduct and/or failed to disclose reasonable, appropriate, or adequate scientific studies to evaluate the environmental fate and transport and potential human health effects of 1,4-dioxane.

87. At all times relevant to this action, products containing 1,4-dioxane were dangerous to an extent beyond that which would be contemplated by the ordinary consumer, and/or the foreseeable risk of harm to public health and welfare posed by 1,4-dioxane outweighed the cost to Supplier Defendants of reducing or eliminating such risk.

88. Supplier Defendants knew or should have known about feasible alternatives to TCA and/or alternatives to producing TCA without the use of 1,4-dioxane, and the omission of such alternative designs rendered Supplier Defendants' products not reasonably safe.

89. As a direct and proximate result of the defects previously described, many of the District's wells have been, and continue to be, contaminated with 1,4-dioxane in varying amounts over time, causing the District significant injury and damage.

90. As a direct and proximate result of the Supplier Defendants' acts and omissions as alleged herein, the District has incurred, is incurring, and will continue to incur damages related to 1,4-dioxane contamination of its wells in an amount to be proved at trial.

91. Supplier Defendants knew it was substantially certain that their acts and omissions described above would cause injury and damage, including 1,4-dioxane contamination of drinking water wells. Supplier Defendants committed each of the above-described acts and omission

knowingly, willfully, and with oppression, fraud, and/or malice. Such conduct was performed to promote sales of 1,4-dioxane and/or products containing 1,4-dioxane, in conscious disregard of the probable dangerous consequences of that conduct and its reasonably foreseeable impacts on public health and welfare. Therefore, the District requests an award of punitive damages in an amount sufficient to punish the Supplier Defendants and that fairly reflects the aggravating circumstances alleged herein.

92. Supplier Defendants are strictly, jointly and severally liable for all such damages, and the District is entitled to recover all such damages and other relief as set forth below.

**SECOND CAUSE OF ACTION  
Strict Products Liability for Failure to Warn  
(Against Supplier Defendants)**

93. The District realleges each of the preceding paragraphs and incorporates each such paragraph as if fully stated herein.

94. As designers, manufacturers, distributors, sellers, suppliers, and/or marketers of 1,4-dioxane and/or products containing 1,4-dioxane, Supplier Defendants had a strict duty to warn against latent dangers resulting from foreseeable uses of their products that Supplier Defendants knew or should have known about.

95. Supplier Defendants knew that third parties would purchase products containing 1,4-dioxane and use them without inspection for defects.

96. Products containing 1,4-dioxane purchased or otherwise acquired (directly or indirectly) from Supplier Defendants by third parties were applied, discharged, disposed of, or otherwise released at various locations, at various times, and in various amounts onto the lands and/or water in the vicinity of the District's drinking water production wells.

97. The products containing 1,4-dioxane purchased by third parties were used in a reasonably foreseeable manner and without substantial change in the condition of such products.

98. Supplier Defendants knew or should have known that the use of products containing 1,4-dioxane in their intended manner would result in the discharge, disposal, or release of 1,4-dioxane onto land or into water.

99. The products containing 1,4-dioxane used in the vicinity of the District's drinking water production wells were defective in design and unreasonably dangerous products for the reasons set forth in Paragraphs 85, 86, 87, and 88 above.

100. Despite the known and/or reasonably foreseeable hazards to human health and welfare associated with the use of products containing 1,4-dioxane in the vicinity of the District's drinking water production wells, including contamination of public drinking water wells with 1,4-dioxane, Supplier Defendants failed to provide adequate warnings of, or take any other precautionary measures to mitigate, those hazards.

101. In particular, Supplier Defendants failed to describe such hazards or provide any precautionary statements regarding such hazards in the labeling of their products containing 1,4-dioxane or otherwise adequate to eliminate the dangers posed by normal and foreseeable use of their products.

102. As a direct and proximate result of Supplier Defendants' failure to warn of the hazards posed by disposal or release of products containing 1,4-dioxane in the vicinity of subterranean public drinking water wells that were, or reasonably should have been, known to them, 1,4-dioxane contaminates many of the District's wells in varying amounts.

103. As a direct and proximate result of Supplier Defendants' acts and omissions as alleged herein, the District has incurred, is incurring, and will continue to incur damages related to 1,4-dioxane contamination of its wells in an amount to be proved at trial.

104. Supplier Defendants knew it was substantially certain that their acts and omissions described above would cause injury and damage, including 1,4-dioxane contamination of drinking water wells. Supplier Defendants committed each of the above-described acts and omission knowingly, willfully, and with oppression, fraud, and/or malice. Such conduct was performed to promote sales of 1,4-dioxane and/or products containing 1,4-dioxane, in conscious disregard to the probable dangerous consequences of that conduct and its reasonably foreseeable impacts on public health and welfare. Therefore, the District requests an award of punitive damages in an amount sufficient to punish the Supplier Defendants and that fairly reflects the aggravating circumstances alleged herein.

105. Supplier Defendants are strictly, jointly and severally liable for all such damages, and the District is entitled to recover all such damages and other relief as set forth below.

**THIRD CAUSE OF ACTION**  
**Negligence**  
**(Against All Defendants)**

106. The District realleges each of the preceding paragraphs and incorporates each such paragraph as if fully stated herein.

107. As commercial manufacturers, sellers, distributors, suppliers, marketers, and/or designers of 1,4-dioxane products, Supplier Defendants owed a duty of care to the District not to place into the stream of commerce a product that was in a defective condition and unreasonably dangerous to drinking water in the District's public supply wells.

108. Supplier Defendants breached this duty by negligently designing, formulating, manufacturing, distributing, selling, supplying, and/or marketing such unreasonably dangerous products into the stream of commerce, including in the vicinity of the District's service area, even when they knew or should have known about the dangers 1,4-dioxane posed to drinking water wells.



109. The Northrop Grumman defendants, as the owners and/or operators of business(es) at the Site that managed, stored, used, transported, and disposed of toxic contaminants and solvents, owed a duty of care to the District to use due care in the handling, control, use, transportation, and disposal of contaminants, including toxic and hazardous materials containing 1,4-dioxane, on the Site.

110. The Northrop Grumman defendants breached that duty by negligently, carelessly, and/or recklessly handling, controlling, transporting, disposing of, and otherwise causing the release into the ground in and around the Site of toxic chemicals, including 1,4-dioxane.

111. The Northrop Grumman defendants further owed a duty to the District upon learning of the release of the contaminants to act reasonably to remediate, contain, and eliminate the spills before the contaminants injured the District and its property and/or to act reasonably to minimize the damage to the District's property.

112. The Northrop Grumman defendants breached that duty by failing to act to reasonably remediate, contain, and eliminate spills before they injured the District and/or to act reasonably to minimize the damage to the District's property.

113. As a direct and proximate result of Defendants' acts and omissions as alleged herein, the District has incurred, is incurring, and will continue to incur damages related to 1,4-dioxane contamination of its wells in an amount to be proved at trial.

114. Defendants knew it was substantially certain that their acts and omissions described above would cause injury and damage, including 1,4-dioxane contamination of drinking water wells. Defendants committed each of the above-described acts and omission knowingly, willfully, and with oppression, fraud, and/or malice. Such conduct was performed to promote sales of 1,4-dioxane and/or products containing 1,4-dioxane, in conscious disregard to the probable dangerous

consequences of that conduct and its reasonably foreseeable impacts on public health and welfare. Therefore, the District requests an award of punitive damages in an amount sufficient to punish the Defendants and that fairly reflects the aggravating circumstances alleged herein.

115. Defendants are jointly and severally liable for all such damages, and the District is entitled to recover all such damages and other relief as set forth below.

**FOURTH CAUSE OF ACTION**  
**Public Nuisance**  
**(Against All Defendants)**

116. The District realleges each of the preceding paragraphs and incorporates each such paragraph as if fully stated herein.

117. The District provides drinking water from its wells to residents and businesses for drinking, bathing, cleaning, washing, and other uses.

118. Because the District is a public entity, the water it provides to those residents and businesses is a public or commonly held resource. Members of the public have a right to have their water remain clean and potable, free of contamination by toxic man-made compounds.

119. Supplier Defendants' acts and omissions, including their manufacture, promotion, marketing, sale, distribution, supply, defective design of, and/or failure to warn regarding 1,4-dioxane in their products, contaminated such wells, rendering water served from them a public health hazard and unfit for human consumption.

120. The negligent, reckless, and/or intentional activities of the Northrop Grumman defendants which resulted in releases of 1,4-dioxane from the Site, as alleged herein, have contaminated Plaintiff's wells with 1,4-dioxane, rendering water served from them a public health hazard and unfit for human consumption.

121. Consequently, Defendants substantially interfered with and caused damage to a public or common resource that endangered public property, as well as the health, safety, and

comfort of a considerable number of persons. Such action creates, contributes to, or maintains a public nuisance.

122. As a direct and proximate result of Defendants' acts and omissions as alleged herein, the District has incurred, is incurring, and will continue to incur damages related to 1,4-dioxane contamination of its wells in an amount to be proved at trial.

123. As an owner of water production wells and purveyor of drinking water, the District suffers injuries different in kind from the community at large because it relies entirely upon its groundwater production wells for its public service functions.

124. Defendants knew it was substantially certain that their acts and omissions described above would cause injury and damage, including 1,4-dioxane contamination of drinking water wells. The Defendants committed each of the above-described acts and omission knowingly, willfully, and with oppression, fraud, and/or malice. Such conduct was performed to promote sales of 1,4-dioxane and/or products containing 1,4-dioxane, in conscious disregard to the probable dangerous consequences of that conduct and its reasonably foreseeable impacts on public health and welfare. Therefore, the District requests an award of punitive damages in an amount sufficient to punish these Defendants and that fairly reflects the aggravating circumstances alleged herein.

125. Defendants are jointly and severally liable for all such damages, and the District is entitled to recover all such damages and other relief as set forth below.

**FIFTH CAUSE OF ACTION**  
**Trespass**  
**(Against All Defendants)**

126. The District realleges each of the preceding paragraphs and incorporates each such paragraph as if fully stated herein.

127. The District owns and possesses its drinking water production system, including drinking water production wells that extract groundwater in its service area in Nassau County, New York.

128. The District actually and actively exercises its rights to appropriate and use groundwater drawn from its wells.

129. The District did not give any Defendant permission to cause 1,4-dioxane to enter its groundwater wells. Defendants knew or reasonably should have known that the District would not consent to this trespass.

130. Supplier Defendants knew or reasonably should have known that 1,4-dioxane has a propensity to infiltrate groundwater aquifers when released to the environment; is a mobile and persistent groundwater contaminant capable of moving substantial distances within aquifers; is toxic to human health; and is therefore hazardous to drinking water systems and human health.

131. Supplier Defendants manufactured, promoted, marketed, distributed, and/or sold products containing 1,4-dioxane, which Defendants knew or reasonably should have known would virtually certainly be discharged and release toxic 1,4-dioxane into the ground and sewer system, and intrude upon, contaminate, and damage the District's possessory interest.

132. The Northrop Grumman defendants negligently, recklessly, and/or intentionally failed to properly use, control, and/or dispose of toxic substances containing 1,4-dioxane, such that the Northrop Grumman defendants proximately caused 1,4-dioxane to enter, invade, intrude upon, and injure Plaintiff's possession of property. The Northrop Grumman defendants engaged in affirmative conduct that caused, contributed to, maintained, and/or assisted in the creation of the trespass alleged herein, including by disposing of industrial waste to the ground despite that they

knew or should have known that contaminants contained therein, including 1,4-dioxane, were persistent, and could contaminate soil and groundwater.

133. Defendants' conduct constitutes a continuing unauthorized intrusion and a continuing trespass onto the District's property.

134. Each Defendant is a substantial factor in bringing about the contamination of the District's wells, and each Defendant aided and abetted the trespasses and is jointly responsible for the injuries and damage caused to the District.

135. As a direct and proximate result of Defendants' acts and omissions as alleged herein, the District has incurred, is incurring, and will continue to incur damages related to 1,4-dioxane contamination of its wells in an amount to be proved at trial.

136. Defendants knew it was substantially certain that their acts and omissions described above would cause injury and damage, including 1,4-dioxane contamination of drinking water wells. Defendants committed each of the above-described acts and omissions knowingly, willfully, and with oppression, fraud, and/or malice. Such conduct was performed to promote sales of 1,4-dioxane and/or products containing 1,4-dioxane, in conscious disregard to the probable dangerous consequences of that conduct and its reasonably foreseeable impacts on public health and welfare. Therefore, the District requests an award of punitive damages in an amount sufficient to punish these Defendants and that fairly reflects the aggravating circumstances alleged herein.

137. Defendants are jointly and severally liable for all such damages, and the District is entitled to recover all such damages and other relief as set forth below.

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## VI. Prayer for Relief

Plaintiff South Farmingdale Water District prays for judgment against Defendants, jointly and severally, awarding Plaintiff:

- a. Compensatory damages in an amount according to proof;
- b. Punitive damages in an amount to be determined at trial;
- c. Injunctive and equitable relief to compel Northrop Grumman Defendants to comply with RCRA, and also in the form of an equitable fund from Defendants to abate the nuisance and trespass;
- d. All appropriate declaratory relief;
- e. Plaintiff's costs in prosecuting this action, including reasonable attorneys' fees, court costs, expert fees, and other expenses of litigation;
- f. Pre-judgment interest and post-judgment interest; and
- g. All other relief this Court deems just, proper, and equitable.

## VII. Demand for Jury Trial

Pursuant to Federal Rule of Civil Procedure 38, Plaintiff requests a trial by jury of all claims so triable.

Dated: March 11, 2019

Respectfully submitted,

/s/ Matthew K. Edling

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